Met Office

NEWS

Space weather experts convene for landmark conference

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The world's leading space weather scientists are joining together for a landmark conference on the future of space weather forecasting and technology as part of European Space Weather Week.

Hosted in the UK for the first time in its 17-year history, European Space Weather Week (W/C 25 October 2021) is a week-long series of events, bringing together the world's leading space weather experts, technologists, engineers and policy influencers to share knowledge and developments in the area. The term 'space weather' describes the effects of natural phenomena that originate on the Sun on technologies on the Earth and in space.

Aptly, European Space Weather Week this year comes after a coronal mass ejection impacted Earth in mid-October, resulting in a moderate geomagnetic storm. While the Northern Lights were visible across some northern areas of the UK, there weren't any infrastructure impacts for a storm of this magnitude. One recent ESA study estimated the potential socio-economic impact in Europe from a single, extreme space weather event could be about €15 billion.

This year's European Space Weather Week will address these concerns, centring around the theme of 'Building Resilience to Impact'.

This is the first time the event has been delivered as a hybrid conference, with experts joining virtually from around the world, as well as in-person in Glasgow. It's run by the Met Office, the Institute of Physics, and the Science and Technology Facilities Council's (STFC) RAL Space.

The Met Office's Space Weather Operations Centre (MOSWOC) monitors space weather and the Sun's activity 24/7, 365 days a year, providing vital forecasts on coronal mass ejections, solar flares and space weather in general. The forecasts serve to help industry prevent some of the worst possible impacts of space weather events, both on Earth and to satellites in space.

Met Office Space Weather Manager Simon Machin said, "This is one of the most important global space weather conferences in the world and it's a landmark event for those who attend.

"Scientists and experts in space weather will be joining us, both virtually and in person, from around the world, sharing the latest research and helping us all to look at the future of space weather forecasting and services."

The event comes after the UK Government published its National Space Strategy in September, as well as the UK Severe Space Weather Preparedness Strategy, which sets out a 5-year vision for boosting UK resilience to the risk of severe space weather events.

The Department for Business, Energy and Industrial Strategy (BEIS) will be presenting at European Space Weather Week, as part of a number of expert speakers who will be discussing space weather, its forecasting, and strategies to minimise potential impacts.

The event will feature interactive seminars, topical discussions, specialist sessions directed at industry, as well as live space weather forecasts being produced from Glasgow (and virtually) as an insight into the workings of space weather centres around the globe. Medals will also be awarded to esteemed members of the space weather and space climate community for significant contributions to the scientific area.

Simon added, “There will be something for everyone with an interest in space weather at European Space Weather Week. The majority of talks will focus on the developments in science and how new science is going to feed into better ongoing services. But there will also be sessions on policy, engineering and potential impacts of space weather.

“There’s a huge amount of exciting work going on in space weather and I’m personally looking forward to seeing some of the developments that are taking place worldwide and working with our international colleagues for the advancement of the science.”

Updates will also be shared on the progress of the £20million UK government-funded Space Weather Instrumentation, Measurement, Modelling and Risk (SWIMMR) programme. This is a four-year programme led by the STFC RAL Space with the Natural Environment Research Council. It aims to incorporate new research and technology to further develop the space weather models used by the Met Office Space Weather Operations Centre and improve the UK’s capabilities for space weather monitoring and prediction.

Institute of Physics Chief Executive Officer, Professor Paul Hardaker, said: "Space weather isn’t just about rare events, it’s an everyday phenomenon. And it is important that we are able to both monitor and model its impact so that we are ready and prepared for those significant events that threaten our infrastructure and in extreme cases our health and wellbeing.

“With the inter-connected nature of our technology and how this is such an integral part of our daily lives, it is critically important that we improve the preparedness for the impact of a significant space weather event. European Space Weather week is doing just that by bringing together our world leading experts in this area to move forward both our understanding of the science and our response capabilities."

Dr Mario Bisi, Programme Committee Chair for ESWW and Space Weather Lead at STFC RAL Space said: “One of the fantastic things about European Space Weather Week is that it brings together not just scientists but also the people involved in monitoring space weather, assessing risk, and working to mitigate against its impacts, from policy makers to aviation experts. Space weather could have a major impact on our society and economy but, by working together as an international community and across disciplines, we can improve our ability to forecast and protect our critical infrastructures.

“We had a fantastic uptake with our virtual meeting in 2020 having attracted around 400 attendees, but this year in the hybrid format, we have over 450 registrants across many space weather and space climate backgrounds, making this year’s meeting perhaps the largest in its 17-year history as a standalone meeting.”

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